

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) At a client computing device having a normal installation behavior for use during a software update installation, the normal installation behavior including a normal user-interface behavior and a normal download behavior used when installing a standard software update, the normal user-interface behavior including presenting a description of a software update and a user-interface control for selecting installation of the software update if desired, the normal download behavior including downloading software updates in the background to minimize the impact on network bandwidth a computer implemented method for modifying the normal installation behavior of the client computing device during a software update installation, the computer implemented method comprising:

obtaining software update information to be installed on the client computing device, the software update information comprising:

a software update, the software update comprising at least one update to at least one software product previously installed on the client computing device;

a rule for applicability of the software update, the rule for applicability defining one or more conditions at the client computing device; and

an installation attribute, the installation attribute indicating that normal installation behavior at the client computing device is to be modified for installation of the software update, the modified installation behavior indicating a modification to one of the normal user-interface behavior and the normal download behavior used when installing a standard update; and

determining that the software update is applicable to the client computing device based on determining that the one or more conditions defined by the rule for applicability are met;and

determining that the installation attribute indicates that normal installation behavior at the client computing device is to be modified for installation of the software update; and

in response to the determination that the software update is applicable to the client computing device and that the installation attribute indicates that normal installation behavior at the client computing device is to be modified:

modifying the normal installation behavior at the client computing device according to the installation attribute to modify at least one of the normal user-interface behavior and normal download behavior used when installing a standard update, wherein modifying the normal download behavior comprises modifying the normal download behavior to permit the download process downloading the software update to compete with other network activities on a current connection at the client computing device so that as much network bandwidth as possible is used when downloading the software update's content so as to download the software update more quickly over the current connection at the client computing device; and

installing the software update on the client computing device according to the modified installation behavior.

2. (Currently Amended) The method of Claim 1, wherein the installation attribute comprises a mandatory installation attribute; and

wherein modifying the normal installation behavior of the client computing device according to the mandatory installation attribute comprises requiring the software update be installed on the client computing device and providing a visual indication in the user-interface that a user is unable to unselect installation of the software update.

3. (Canceled).

4. (Currently Amended) The method of Claim 1, wherein the installation attribute comprises a deadline installation attribute; and

wherein modifying the normal installation behavior of the client computing device according to the deadline installation attribute comprises:

determining that the deadline for the deadline installation attribute has passed, and in response to the determination, requiring the software update to be installed on the client computing device and modifying the standard user-interface behavior to automatically install the software update without further user interaction.

5. (Currently Amended) The method of Claim 1, wherein the installation attribute comprises a zero system interruption (ZSI) installation attribute, the ZSI attribute indicating that the software update is a ZSI software update configured so as to not cause any software interruptions during installation; and

wherein modifying the normal installation behavior of the client computing device according to the ZSI installation attribute comprises:

determining that the client computing device is configured for automatic installation of ZSI software updates, and in response to the determination, automatically installing the software update without further user interaction.

6. (Currently Amended) A computer program product for use at a client computing device, the client computing device having a normal installation behavior for use during a software update installation, the normal installation behavior including a normal user-interface behavior and a normal download behavior used when installing a standard software update, the normal user-interface behavior including presenting a description of a software update and a user-interface control for selecting installation of the software update if desired, the normal download behavior including downloading software updates in the background to minimize the impact on network bandwidth, the computer program product comprising a computer-readable storage medium having stored ~~there~~ thereon computer-executable instructions which, when executed at a processor, cause the client computing device, to implement a method for modifying the normal installation behavior of the client computing device during a software update installation, the method comprising the steps of:

obtaining software update information to be installed on the client computing device, the software update information comprising:

a software update, the software update comprising at least one update to at least one software product previously installed on the client computing device;

a rule for the applicability of the software update, the rule for applicability defining one or more conditions at the client computing device; and

an installation attribute, the installation attribute indicating that normal installation behavior at the client computing device is to be modified for installation of the software update, the modified installation behavior indicating a modification to one of the normal user-interface behavior and the normal download behavior used when installing a standard update; and

the processor determining that the software update is applicable to the client computing device based on determining that the one or more conditions defined by the rule for applicability are met;

determining that the installation attribute indicates that normal installation behavior at the client computing device is to be modified for installation of the software update; and

in response to the determination that the software update is applicable to the client computing device and that the installation attribute indicates that normal installation behavior at the client computing device is to be modified:

modifying the normal installation behavior at the client computing device according to the installation attribute to modify at least one of the normal user-interface behavior and

normal download behavior used when installing a standard update, wherein modifying the normal download behavior comprises modifying the normal download behavior to permit the download process downloading the software update to compete with other network activities on a current connection at the client computing device so that as much network bandwidth as possible is used when downloading the software update's content so as to download the software update more quickly over the current connection at the client computing device; and

installing the software update on the client computing device according to the modified installation behavior.

7. (Currently Amended) The computer program product of Claim 6, wherein the installation attribute comprises a mandatory installation attribute; and

wherein selectively modifying the normal installation behavior of the client computing device according to the mandatory installation attribute comprises requiring the software update to be installed on the client computing device and providing a visual indication in the user-interface that a user is unable to unselect installation of the software update.

8. (Canceled).

9. (Currently Amended) The computer program product of Claim 6, wherein the installation attribute associated with the software update comprises a deadline installation attribute; and

wherein modifying the normal installation behavior of the client computing device according to the deadline installation attribute comprises:

determining that the deadline for the deadline installation attribute has passed, and in response to the determination, requiring the software update to be installed on the client computing device and modifying the standard user-interface behavior to automatically install the software update without further user interaction.

10. (Currently Amended) The computer program product of Claim 6, wherein the installation attribute comprises a zero system interruption (ZSI) installation attribute, the ZSI attribute indicating that the software update is a ZSI software update configured so as to not cause any software interruptions during installation; and

wherein modifying the normal installation behavior of the client computing device according to the ZSI installation attribute comprises:

determining that the client computing device is configured for automatic installation of ZSI software updates, and in response to the determination, automatically installing the software update without further user interaction.

11. (Currently Amended) At a client computing device having a normal installation behavior for use during a software update installation, the normal installation behavior including a normal user-interface behavior and a normal download behavior used when installing a standard software update, the normal user-interface behavior including presenting to a user at the client computing device a description of a software update and a user-interface control for selecting installation of the software update if desired, the normal download behavior including downloading software updates in the background to minimize the impact on network bandwidth, a computer implemented method for modifying the normal installation behavior of the client computing device during a software update installation according to associated installation attributes, the computer implemented method comprising the steps of:

obtaining software update information to be installed on the client computing device, the software update information comprising:

a software update, the software update comprising at least one update to at least one software product previously installed on the client computing device;

a rule for the applicability of the software update, the rule for applicability defining one or more conditions at the client computing device; and

an installation attribute operable for controlling the installation of the software update;

determining whether the installation attribute is a mandatory installation attribute indicating that the software update must be installed by the user, and if so, requiring the software update to be installed and modifying the standard user-interface behavior of the client computing device to provide a visual indication in the user-interface that the user is unable to unselect installation of the software update;

determining whether the installation attribute is a priority installation attribute, and if so, modifying the standard download behavior to permit the download process downloading the software update to compete with other network activities on a current connection at the client computing device so that as much network bandwidth as possible is used when downloading the software update's content so as to download the software update more quickly over the current connection at the client computing device;

determining whether the installation attribute is a deadline installation attribute indicating that the software update must be installed by a corresponding deadline, and if so, determining whether the corresponding deadline of the deadline attribute has expired, and if so, requiring the software update

to be installed and modifying the standard user-interface ~~behavior~~ behavior of the client computing device to provide a visual indication in the user-interface that the user is unable to unselect installation of the software update;

determining whether the installation attribute is a zero service interruption (ZSI) installation attribute indicating that the software update may be installed without any system interruption of the client computing device, wherein a system interruption includes rebooting the client computing device, terminating a software application at the client computing device, and requiring user interaction at the client computing device, and if so, modifying the normal installation behavior of the client computing device with respect to the software update such that the software update will be automatically installed on the client computing device without user interaction ~~any system interruption~~ if the client computing device is properly configured; and

installing the update on the client ~~computer~~ computing device according to the modified installation behavior.

12. (Currently Amended). The method as recited in claim 1, further comprising:
authenticating with an software update service prior to obtaining the software update information, authentication including:

sending a configuration request message to the software update service;

receiving an indication that software update service includes a server side authorization plug-in corresponding to a target group of client computing devices;

determining that the client computing device includes a client side authorization plug-in corresponding to the server side authorization plug-in;

sending an authorization cookie to the software update service in response to the determination, the authorization cookie identifying the target group of client computing devices; and

receiving a server cookie from the software update service containing an identifier for the a target group of client computing devices; and

storing the server cookie at the client device such that the client device can use the server cookie to indicate membership in the target group of client computing devices.

13. (Currently Amended) The method as recited in claim 12, wherein obtaining software update information to be installed on the client computing device comprises determining that the software update is targeted to the target group of client computing devices.

14. (Currently Amended) The method as recited in claim 1, further comprising:
synchronizing available updates with a software update service, including traversing a software update hierarchy to identify specific software updates that apply to the client computing device, the software update hierarchy including at least a base set of one or more base updates and a second set of one or more second tier updates, wherein proper installation of the second tier updates depends on a prior installation of the base updates, and wherein:

(i) each base update includes one or more applicability conditions to be tested at the client computing device to determine if the base update is applicable to the client computing device; and

(ii) each second tier update includes: (a) one or more applicability conditions to be tested at the client computing device to determine if the second tier update is applicable to the client computing device, (b) prerequisites ~~indentifying~~ identifying one or more base updates that are required for proper installation of the second tier update, and (c) an indicator of whether or not the second tier update is a leaf update, wherein a leaf update has no other updates dependent on a prior installation of the leaf update.

15. (Currently Amended) The method as recited in claim 14, wherein obtaining software update information to be installed on the client computing device comprises receiving a selection of one or more software updates from among the identified specific software updates that apply to the client computing device.

16. (Currently Amended) The method as recited in claim 1, wherein modifying the normal installation behavior at the client computing device according to the installation attribute comprises modifying a background download process that normally determines the client computing device's network usage and makes download requests for software updates based on available remaining bandwidth.

17. (Currently Amended)[[-]]The method as recited in claim 11, further comprising:
authenticating with an software update service prior to obtaining the software update information, authentication including:

- sending a configuration request message to the software update service;
- receiving an indication that software update service includes a server side authorization plug-in corresponding to a target group of client computing devices;
- determining that the client computing device includes a client side authorization plug-in corresponding to the server side authorization plug-in;
- sending an authorization cookie to the software update service in response to the determination, the authorization cookie identifying the target group of client computing devices; and
- receiving a server cookie from the software update service containing an identifier for the a target group of client computing devices; and
- storing the server cookie at the client device such that the client device can use the server cookie to indicate membership in the target group of client computing devices.

18. (Currently Amended) The method as recited in claim 17, wherein obtaining software update information to be installed on the client computing device comprises determining that the software update is targeted to the target group of client computing devices.

19. (Currently Amended) The method as recited in claim 11, further comprising subsequent to authenticating:

synchronizing available updates with a software update service, including traversing a software update hierarchy to identify specific software updates that apply to the client computing device, the software update hierarchy including at least a base set of one or more base updates and a second set of one or more second tier updates, wherein proper installation of the second tier updates depends on a prior installation of the base updates, and wherein:

(i) each base update includes one or more applicability conditions to be tested at the client computing device to determine if the base update is applicable to the client computing device; and

(ii) each second tier update includes: (a) one or more applicability conditions to be tested at the client computing device to determine if the second tier update is applicable to the client computing device, (b) prerequisites indentifying one or more base updates that are required for proper installation of the second tier update, and (c) an indicator of whether or not the second tier update is a leaf update, wherein a leaf update has no other updates dependent on a prior installation of the leaf update.

20. (Currently Amended) The method as recited in claim 19, wherein obtaining software update information to be installed on the client computing device comprises receiving a selection of one or more software updates from among the identified specific software updates that apply to the client computing device.

21. (New) The method as recited in claim 11, wherein the normal user-interface behavior includes presenting the user a user-interface control to cancel installation of all software updates, regardless of whether the installation attribute for the software update is a mandatory installation attribute.

22. (New) The method as recited in claim 11, wherein if it is determined that the corresponding deadline of the deadline attribute has not expired, modifying the standard user-interface behavior of the client computing device to provide a visual indication in the user-interface that the user must install the software update by the corresponding deadline.